The occurrence of solar eclipses has afforded opportunity for observations showing a close connection between the frequency of sun spots and the characteristic processes in the solar corona. At the time of sun-spot minimum the coronal streamers are especially frequent in the neighborhood of the solar equator, where they appear radial to the solar disk and with very considerable extension outward; as we approach the sun's pole their dimensions diminish and they curve toward the equator. During a sun-spot maximum these streamers are distributed more equally over the sun's disk and are everywhere smaller. Simultaneously the spectral lines of the gaseous components of the aurora are much brighter during sun-spot maxima and observable to a much greater distance from the sun's limb than during sun-spot minima. According to Nordmann, this gaseous layer in the sun's atmosphere receives its ability to send us light by its absorption of Hertzian waves. Furthermore, with reference to meteorologico-magnetic relations, Nordmann has made a brief summary that enables him to draw conclusions as to the velocity with which disturbances in the sun are transmitted to terrestrial conditions. For instance, in five well-known cases simultaneous observations as to the sudden occurrence of solar eruptions and magnetic disturbances show that the passage from the sun to the earth must take place with the velocity of light. Again, in another place Nordmann collects data from which it follows that the occurrence of a magnetic disturbance is simultaneous with the passage of a sun spot through the central meridian in only the rarest possible number of cases. These two latter results would certainly seem likely to entirely overthrow the hypotheses that refer the origin of auroras to the direct cathodic radiation from the sun. But, on the contrary, arguing from the experiments by Lenard, J. J. Thomson, Ebert, and Wiedemann, Nordmann is rather inclined to the idea that Hertzian waves proceeding from the sun do cause the auroras in our atmosphere.

It is well known that as early as 1896 Scheiner and Wilsig endeavored to solve the question whether energy comes to us from the sun in the form of electro-dynamic radiation; the measurements carried out in Potsdam led to no positive results. On the other hand, the occurrence of the great sun spot of October 31, 1903, which was accompanied by a great aurora and a remarkable magnetic disturbance, brought about no Hertzian waves in the lower strata of the atmosphere, as we know from the fact that the atmospheric or wireless telegraphy was not interfered with to any appreciable extent. In consideration of the fact that J. J. Thomson has suggested that the Hertzian waves would be absorbed to a large degree by the thin gases of our upper atmosphere, Nordmann decided to repeat the observations at much higher altitudes. Unfavorable weather prevented his work on the summit of Mont Blanc. It was, therefore, carried out in September, 1901, at the Bossons at an altitude of 3100 meters in accordance with the following method:

The receiver for the Hertzian waves consisted of a wire 5 millimeters in diameter and 175 meters long, isolated and so located on the earth that at midday the solar rays struck it normally to its length. The indicator for the possible Hertzian wave was a form of coherer that was placed inside of a vessel filled with quicksilver. The coherer was connected on the one hand with the above-mentioned wire receiver, and on the other hand with a well insulated wire inside the mercury; the wire led to a galvanometer and a LeClanche element, and then returned to contact with the mercury. If a Hertzian wave were present, a current would follow, but the experiments led to no decision.

According to Nordmann this was explained by the fact that at this time the sun had unusually few spots, and furthermore by the fact that at midday the altitude of the sun was too low. The author intends to repeat these observations in the course of the present year under more favorable conditions. The best chance for success would be to execute such observations during a high balloon voyage at the time of a great magnetic disturbance. It must surprise one that Nordmann did not delay the publication of his theory of the auroral light until he could obtain some more reliable basis for his ideas. The hypothetical character of his views is easily seen by the following simple statement of his train of thought.

Hertzian waves come from the sun; their intensity increases with the increased solar activity; in proportion to their intensity, they penetrate into our atmosphere to within 50 kilometers of the sea level and thus are absorbed, partly with the evolution of light; thereby the respective strata of air become electrically conductive, and if great potential differences exist electric currents are developed whose intensity varies with the physical conditions; the air that is made luminous gives occasion to the emanation of cathode rays which spread through space, thereby deciding the arrangement of the magnetic lines of force and the distribution of the electrostatic field. Rapid changes in the movement of the visible processes, namely the aurora, due to the absorption of the cathode rays in the air, are explained by the sudden changes, positive or negative, in the sign of the electrostatic field.

A more careful consideration of recent magnetic literature should have shown the author many objections, not only against the validity of his theory but also against his explanations of other magnetic questions.

CORRIGENDA.

MONTHLY WEATHER REVIEW for November, 1903, p. 526, column 2, line 4 above the second table, for "J. E. Keller" read "J. E. Keeler."

THE WEATHER OF THE MONTH.

By Mr. W. B. STOCKMAN, District Forecaster, in charge of Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart VIII and the average values and departures from normal are shown in Tables I and VI.

The mean barometer was generally high over the central and eastern districts and low over the southwestern. The crest of high mean pressure overlay Lake Superior, northern Minnesota, eastern North Dakota, and the contiguous Canadian territory. The area of low mean pressure overlay the middle and southern Plateau and slope regions, with the lowest mean readings reported from the upper Rio Grande Valley.

The mean pressure was below the normal in the Florida Peninsula and from central South Carolina northward over the lower Lake region and central New England, also in the north Pacific region; elsewhere it was above normal.

The negative departures were slight, not exceeding —.05 inch at any of the stations in the United States, while over the central half of the country from eastern Texas, northwestward and northeastward, the positive departures were quite marked and ranged from +.05 to +.16 inch, the maximum departure occurring in southeastern South Dakota.

Generally east of the eighty-seventh meridian, also in southern Arizona and extreme southern California, the mean pressure diminished from that of March, 1904; elsewhere it increased over March, 1904.

Over the eastern lower Lakes and the Atlantic States north of Georgia the minus changes were quite decided, ranging from —.05 inch in the southern and western portions of this area to —.15 inch over southern New England.

As a rule, the plus changes were greater than the minus. An area of changes amounting from +.10 to +.15 inch overlay the central slope districts, and a less extensive area, but with more decided changes, over the extreme northwestern districts, in which area the changes ranged from +.10 inch on the south and east to +.25 inch on the northwestern coast of Washington.

TEMPERATURE OF THE AIR.

The distribution of maximum, minimum, and average surface temperatures is graphically shown by the lines on Chart V.

Generally over the eastern two-thirds of the country and in interior California, Nevada, and western Arizona the temperature was below the normal.

Over almost the entire area where there was a deficiency in temperature the changes were marked, and ranged from —2.0° to —8.5°, the area of greatest deficiency overlaying the Ohio Valley, Tennessee, and the central Mississippi Valley, with the greatest changes in Missouri, where they ranged from —6.1° to —8.5°.

The plus departures were slight, and nowhere in the United States did they equal 4.0°. The previous highest mean temperature for the month of April since the establishment of the station was exceeded by 1° at Seattle and Tacoma, Wash., and by 4° at Lewiston, Idaho, and the lowest by 1° at Binghamton, N. Y., Fort Smith, Ark., Green Bay, Wis., Harrisburg, Pa., Lexington, Ky., Little Rock, Ark., Springfield, Ill., Sandusky, Ohio, Sioux City, Iowa, and Wichita, Kans.; by 2° at Columbus, Ohio, Concordia, Kans., and Evansville, Ind.; by 3° at